

# Cell Analogies

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Analogy (Webster's):** "A comparison between two things which are similar in some respects, but otherwise different. An explaining of something by comparing it point by point with something else."

**You have two options for this Project.**

- 1) You may turn your overall cell into an analogy ("My cell is like a school") and each organelle must be compared to a part of that analogy ("The nucleus is like a principal of the school"), "my cell is a city and the nucleus is the mayor."

## Part One Instructions:

Fill in the spaces below for each cell part in order to create a one-sentence analogy that shows the similarity between the cell part and the object you selected to represent the cell part in your collage. Be sure to explain the reasoning behind your analogies (see the underlined section of the example).

**Example Analogy:** "The **nucleus** is like a **brain** because it controls and coordinates the activities of the whole cell in the same way the brain controls and coordinates the activities of the body."

**Remember:** Your analogies need to be accurate, complete, and *original*.

What is the overall theme for your cell, school, city, factory, etc.?

## ORGANELLES FOUND IN ALL EUKARYOTIC CELLS

1. The **cell membrane** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the cell membrane regulates what can enter or leave the cell.**
2. The **nucleus** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the nucleus is the control center of the cell.**
3. The **mitochondrion** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the mitochondria makes energy in the form of ATP for the cell.**
4. The **Golgi apparatus** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the golgi apparatus processes proteins for shipment out of the cell.**
5. The **cytoplasm** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the cytoplasm surrounds and bathes all of the organelles within the cell.**
6. The **ribosome** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the ribosome uses the instructions in DNA to assemble (or make) proteins.**
7. The **vacuole** is like \_\_\_\_\_ because it \_\_\_\_\_  
\_\_\_\_\_ in the same way **the vacuole stores water and nutrients for the cell.**

## ORGANELLES FOUND IN ANIMAL CELLS AND SOMETIMES PLANT CELLS

8. The **lysosome** is like \_\_\_\_\_ because it \_\_\_\_\_  
 \_\_\_\_\_ in the same way **the lysosome digests wastes, worn out cell parts, and foreign invaders.**

**ORGANELLES FOUND IN PLANT CELLS BUT NOT ANIMAL CELLS**

9. The **cell wall** is like \_\_\_\_\_ because it \_\_\_\_\_  
 \_\_\_\_\_ in the same way **the cell wall provides strength and support to the cell.**

10. The **chloroplast** is like \_\_\_\_\_ because it \_\_\_\_\_  
 \_\_\_\_\_ in the same way the chloroplast converts the sun's energy into sugars during the process of photosynthesis.

**Check off as you complete each task:**

\_\_\_\_\_ 1. Draw your cell and be sure to include all of the cell organelles listed above in your cell (if you compared your cell to a factory then you would draw a factory and the inside would include pictures of your analogies).

\_\_\_\_\_ 2. Neatly label all of the organelles in your cell.

\_\_\_\_\_ 3. Next to each labeled organelle, rewrite your analogies from above onto your board. **Make sure the analogy above is written identical to what you write on the board.**

\_\_\_\_\_ 4. Draw or find a picture of what you compared each organelle to next to the analogy.

5. Give your poster a Title (Ex: "I compared my plant/animal cell to a \_\_\_\_\_")

Category	4	3	2	1	Score
Factual Information (x3)	There are no factual mistakes on the visual and all analogies make sense.	There are 1-2 factual mistakes on the visual.	There are 3-4 factual mistakes on the visual.	There are more than 4 factual mistakes on the visual.	
Required Elements (x3)	The visual includes all required elements	All but 1 of the required elements are included on the visual.	All but 2 of the required elements are included on the visual.	More than 2 required elements were missing.	
Oral Presentation (x2)	Poised, clear articulation; proper volume; steady rate; good posture and eye contact; enthusiasm; confidence	Clear articulation but not as polished	Some mumbling; little eye contact; uneven rate; little or no expression	Inaudible or too loud; no eye contact; rate too slow/fast; speaker seemed uninterested and used monotone	
Creativity (x1)	Very original presentation of material; uses the unexpected to full advantage; captures audience's attention	Some originality apparent; good variety and blending of materials/media	Little or no variation; material presented with little originality or interpretation	Repetitive with little or no variety; insufficient use of multimedia	
Labels (x1)	All items of importance on the visual are clearly labeled with labels that are visible from at least 3 feet away	All items of importance except 1 to 2 items on the visual are clearly labeled with labels that are visible from at least 3 feet away	All items of importance except 3 to 4 items on the visual are clearly labeled with labels that are visible from at least 3 feet away.	Labels are too small to view OR no important items were labeled	
Attractiveness (x1)	The visual is exceptionally attractive in terms of design, layout, and neatness.	The visual is attractive in terms of design, layout and neatness.	The visual is acceptably attractive though it may be a bit messy.	The visual is distractingly messy or very poorly designed. It is not attractive.	
<b>Total score out of a possible 44 points</b>					
<b>Comments:</b>					
					<b>Total:</b>
					<b>Score:</b>